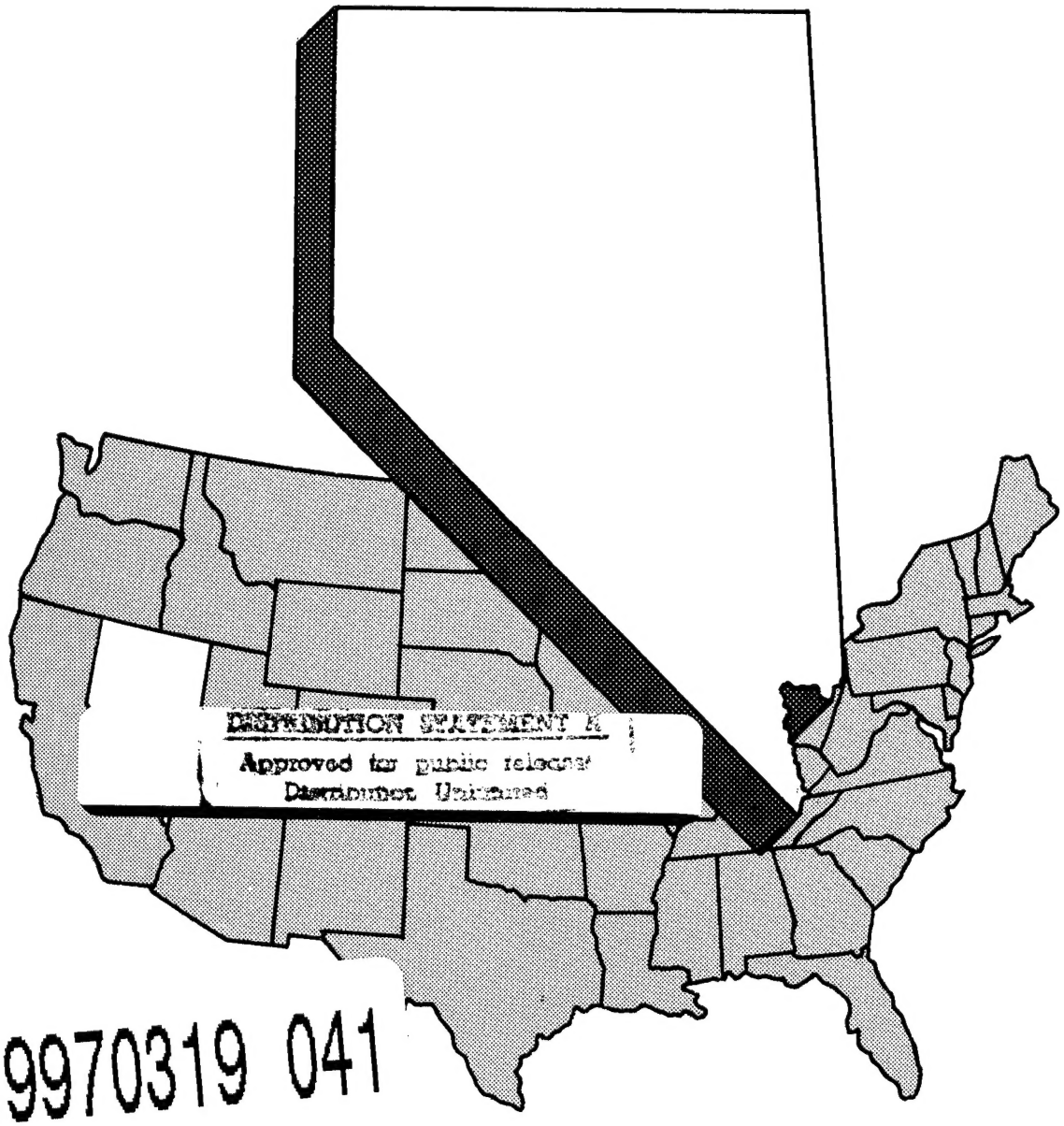
Opportunities to Protect Instream Flows and Wetland Uses of Water in Nevada



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Opportunities to Protect Instream Flows and Wetland Uses of Water in Nevada

By James L. Bingham
George A. Gould

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Preface

The National Ecology Research Center and its predecessor, the Western Energy and Land Use Team, have published a number of documents similar to this monograph. Information is now available for 33 western, midwestern, and southern states (list inside back cover).

The purpose of these reports is to point out the opportunities in instream flow management that currently exist under state law so that planners and managers can anticipate development, plan appropriate programs, and evaluate the costs and benefits of certain courses of action. In addition, the reports are brief histories of the level of success of various state programs. The use of this information can result in significant cost saving for planners and managers.

In some reports, opportunities in each state are presented in a single document, but, in several publications, reports on two or more states from the same geographic region are combined. The combined reports aid comparison of specific programs. This is particularly useful because of the variety of instream flow protection programs or possibilities.

Each report has an introduction that discusses its purpose, uses, and limitations, and a separate information table that summarizes the contents for each state.

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Introduction

Objectives

This document combines the efforts of several individuals, agencies, and organizations toward the common objectives of identification, description, and preliminary evaluation of promising opportunities for protecting instream flows and wetland uses of water under existing laws in Nevada.

This report is intended for the use of state and federal planning and management personnel who need an overview of potential opportunities for preserving instream flows and uses. It is not intended to replace or challenge the advice of agency counsel, nor is it written to provide legal advice. Instead, it is designed as a guide through sometimes bewildering state statutes and administrative practices. This report is not, and should not be taken as, official policy or prediction of future actions by any agency. It's simply a summary of potential opportunities for protecting instream uses.

Toward these objectives, the U.S. Fish and Wildlife Service, through its Water Resources Analysis Project, contracted in 1977 with R. Dewsnup and D. Jensen to identify available strategies under state and federal laws, interstate compacts, and water quality laws. A second firm, Enviro Control, Inc., was contracted to evaluate the most promising strategies. The resulting documents reported instream flow strategies for 11 states (Nelson et al. 1978). These reports have been revised, updated, and combined in a number of new monographs, and the Service has added more states to this series over the years. The discussion of instream flow programs and opportunities for each state is written so each report can be read independently, with minimum cross-referencing from one report to another. The opportunities for Nevada are summarized in the Table.

Table. *Summary of opportunities to protect instream flows and wetland uses of water in Nevada.*

Title	General description	Applicable situations
Appropriation of water for instream and wetland uses (see page 11)	Any person may apply for an appropriation of water to be used for wildlife watering or the protection of fisheries. [*State* v. *Morros*, 766 P. 2d 263 (Nev. 1988)].	Available on under-appropriated streams or where nonconsumptive appropriation will not affect existing rights.
State discretionary permit authority (see page 12)	The State Engineer may reject any application for appropriation or change of use that threatens to prove detrimental to instream values.	Whenever a proposed diversion or change of use will interfere with instream flows.
Purchase or lease of water rights (see page 13)	Any state or federal agency, as well as public interest groups, may purchase water rights for wildlife watering, protection of fisheries, or wetlands management [*State* v. *Morros*, 766 P. 2d 263 (Nev. 1988)]. However, the purchaser must also apply for a change permit with the Office of the State Engineer [N.R.S. 533.060].	Wherever a water supply is needed to protect a wildlife or recreation area.
Use of groundwater to protect wetland areas (see page 15)	Groundwater rights may be purchased for delivery to wetland areas.	Applicable to wetland areas in the Carson–Truckee river systems.
Efficient delivery and use of water (see page 15)	Efficient delivery and use of water can free water for instream and wetland uses.	Everywhere.
Cooperative management of reservoirs (see page 24)	Water managers can consider use of storage credits, timely release of flows to meet actual demand, and efficient use of flood storage to protect instream flows.	Any reservoir where action is not subject to operating restrictions.
State–federal protection of fish and wildlife habitats (see page 17)	State agencies have the opportunity to consult with federal agencies regarding the environmental consequences of federal action.	Wherever federal action may damage natural streams or wetland areas.

Table. *Continued.*

Title	General description	Applicable situations
Water quality and pollution control (see page 18)	The quality of instream flows can be protected through classification of pollutant discharges and enforcement of conditional permits (N.R.S. ch. 445).	Wherever pollutants are discharged into surface or groundwaters.
Riparian rights within the appropriation system (see page 19)	Riparian rights granting riparian landowners certain rights to use water in the watercourse may exist in Nevada.	Applies only to the riparian rights adjudicated before 1885.
State–federal protection of endangered species (see page 20)	State and federal agencies have the mandate to consider the preservation of endangered species when planning water projects. In addition, state agencies can challenge water appropriations harmful to fish habitats.	Wherever there are endangered species as listed with state or federal agencies.
Interstate allocation of water (see page 22)	State agencies and interested parties can include the protection of instream values as part of any agreement to allocate water between two or more states.	Wherever water systems cross state lines.

Background Considerations

Both state and federal agencies have important roles to play in water management, particularly in instream flow preservation. This report is written from the perspective that the states have primary authority over water management, unless they are limited or superseded by an act of Congress or duly authorized federal program, project, or judicial decision.

The summaries offered here are not intended to suggest that federal instream flow decisions will or should replace current state water administration or management systems. It is important for federal employees to recognize the importance of state water management policy and statutes. Close working relations between state and federal agencies are often the most practical way of getting things accomplished. Resources are always limited and, in some cases, gathering and developing information may be beyond the financial capability of the agency most concerned. As a result, agencies and individuals should learn to cooperate with similarly oriented private, state, and federal organizations to ensure success.

The reader who wishes to understand opportunities for protection of instream flows and wetland areas should begin by looking at the physical and legal circumstances of the entire system or body of water. A planner or manager should consider all types of land and water interests involved, examining both upstream and downstream of the reach of interest. Downstream interests should be considered because often they have statutory or contractual power to hold water instream. This survey should include ownership, possession, and control of lands and waters and their present uses, such as agriculture, planned development, wilderness, or industry.

Contracts or leases may be held by several organizations or individuals. In addition, government agencies may have authority over the land

and water. Potential governing agencies are many and diverse, ranging from the federal to state governments, special districts, and municipal bodies. Therefore, a knowledge of the various instream flow and wetlands opportunities is important.

Instream flow problems may include appropriation conflicts, lack of flow, or administrative difficulties. When possible, the planner or manager should seek the least expensive, least disruptive, and simplest solution to the problem. In some cases, this may mean having a conversation with a landowner or local administrator, sending a letter to the owner or lessee of the land and water, or simply arranging a meeting between water users who could stagger their withdrawals or in some other way provide for an instream flow. However, these are informal methods and offer no legal protection, so their usefulness is limited to those situations in which voluntary arrangements are acceptable.

A risky, complex, and often expensive approach to protecting streams is the use of lawsuits. In some cases, litigation may be an unavoidable part of protecting a right.

In using this report, the reader should be aware of its purpose and limitations. First, all conceivable opportunities are not addressed here. The user should exercise initiative, judgment, and creativity in dealing with any specific situation. Second, this report should be used only as a starting point. Legal advice should be sought in any situation related to the acquisition of water rights. This report should in no way be construed as a substitute for the opinion of a private attorney, attorney general, or agency counsel. Third, this report is neither a policy nor a decision document, but is simply a collection of opportunities that seem to have utility in a variety of situations.

The purpose of this report is to encourage cooperative and innovative thinking by all persons interested in protecting instream flows for fish, wildlife, and watershed management at federal, state, or local levels of government, as well as private individuals and wildlife organizations. Many talented people want to protect instream flows, and their cooperation in a variety of approaches will be necessary to further this goal.

Overview

Nevada is the most arid state in the Union. The average annual precipitation is about 22.86 cm (9 inches), and most of this is lost to evapotranspiration. Competition for this scarce and precious resource has been keen, as mining and agriculture shaped the development of water resources. Miners needed water for mining operations, and later, farmers and ranchers joined the competition, diverting water for irrigation.

Early users saw water as valuable only when put to economic use, and watercourses were considered only as natural canals for the delivery of water. Consequently, water law in Nevada supported economic development of the resource. All water was subject to the appropriation system. Further, a valid appropriation required a diversion of the water from the streambed. Instream water rights were only recognized for livestock-watering purposes, and there was little or no protection for wildlife or fishery habitats. As a result of diversions, poor planning, and drought, Nevada has lost much of its fishery and wetland areas, more than 80% of its wetlands areas in just this century. For instance, Winnemucca Lake, once a 24,300-ha (60,000-acre) wildlife feeding ground, is now a dry lake bed.

In recent years the law has changed, removing some of the legal barriers to the protection of instream flows and wetlands uses of water. Future progress will depend on the ability of water planners to integrate the protection of instream values into the law and structure of vested rights.

History of Water Law in Nevada

The Early Years

Western water law originated as a branch of mining law, with the fundamental principle of first come, first served (Weil 1908). From earliest years, following the discovery of gold, water was a necessary part of the mining process, and mining customs controlled. At first miners used ditches to conduct water into sluice boxes, shov-

eled earth into the boxes, and used the current to separate the gold from the soil. As operations became more sophisticated the need for water increased. Investors built canals to convey and sell water to owners of mining claims, and conflicts soon developed between miners and ditch owners. These conflicts were settled at miners' meetings, and in a short time customs were in force regulating not only the size of mining claims, but also the conflicting claims of miners and ditch owners [e.g., *Titcomb* v. *Kirk*, 51 Cal. 288 (1876)]. By 1860, however, the miners' forum was inadequate to handle water disputes because of the increased number of people appropriating water for irrigation and the timber industry.

The irrigation of land in Nevada began about 1849 when settlers irrigated lands along stream channels from ditches constructed to furnish water to ore reduction mills. Judge Thomas P. Hawley, who came to Nevada in 1852, gave a vivid description of the scene in *Union Mill and Mining Co.* v. *Danberg* [81 Fed. 73, 100–103 (C.C.D. Nev. 1897)]. In 1852, the settlers were squatters on the public domain. They raised cattle, allowed to roam at large, and used stream water for agriculture purposes. Water would overflow its various sloughs and spread over the lowlands at high water, then cuts were made through the river banks to let the water out when the stream was not flowing bank-full (Hutchins 1977).

Before 1860, irrigation remained supplementary to mining and conflicts regarding water rights were settled by the miners' custom of first in time, first in right. After the discovery of the Comstock Lode, however, people flocked to western Nevada, immediately transforming the area from a wilderness to an urban environment (Townley 1980b). With the increased population came a need for more food. People were willing to pay premium prices for food products, and, as a result, more irrigation dams were built to put more land into production. Water was needed not only for staple crops, but also for forage crops to support the expanding livestock industry. Water disputes were no longer affairs solely between miners and ditch companies as farmers, ranchers, timber interests, and communities became important considerations.

Development of Nevada Water Law

There was neither statutory nor case law to regulate water appropriation in Nevada before 1866. From 1850 to 1861, all of present Nevada except that portion south of the 37th parallel was included in the Utah Territory. Utah law left the control of all water privileges to individual counties within the territory, and those counties in the Nevada area followed the mining custom of group meetings.

The Nevada Territory was established in 1861 and the first Territorial Assembly exerted some control over its river systems. The early legislature focused on watercourses for transport, including Carson River channeling for log drives, irrigation canals from the Truckee River to the Washoe Valley, and a navigable waterway linking the Carson and Humboldt rivers. The assembly tried to protect fish populations in the Carson and Truckee rivers by passing legislation prohibiting the use of traps or poison to catch cutthroat trout (*Oncorhynchus clarki*) from Pyramid Lake. In 1862, the assembly prohibited the dumping of sawdust into territorial rivers (Townley 1980a,b).

The assembly did not, however, pass laws regulating the appropriation of water. It did recognize the existence of water rights, stipulating in the Carson River channeling legislation that existing irrigation dams were not to be damaged (Townley 1980a). But, like the Utah Territorial Government before it, the Nevada Assembly left the control of appropriation to local groups.

In 1866, the appropriation doctrine was first recorded and applied by the Nevada Supreme Court in the case of *Lobdell* v. *Simpson* [2 Nev. 274 (1866)]. The controversy began in the summer of 1860 when Lobdell occupied a ranch on Desert Creek in Esmerelda County. He began digging an irrigation ditch in December 1860. He finished that ditch in February 1861 and immediately began constructing a second ditch, finishing in March 1861. The two ditches carried about 300 miners' inches (7.5 cfs) of water. In March or April of 1861, two partners, Simpson and Hall, located and occupied a ranch on Desert Creek several miles upstream from Lobdell. The Simpson–Hall ranch had been irrigated by an old ditch, origi-

nally dug by Indians for running fish out on the meadowland [*Lobdell* v. *Hall*, 3 Nev. 507, 510 (1868)].

The main issue before the court concerned the priority of appropriation. The specific issue was not decided because the court reversed the lower court decision and ordered a new trial. However, the court discussed the common law riparian rights system of water law as compared to the practice of prior appropriation in western states. Chief Justice Lewis, writing for the court, recognized the existence of riparian common law (i.e., that every proprietor of lands on the banks of a river has naturally an equal right to the use of water which flows in the stream adjacent to his lands, as it is wont to run, without diminution or alteration) [*Lobdell* v. *Simpson*, 2 Nev. 274 (1866)]. However, the opinion continued, the anomalous condition of settlers and miners on public lands requires a departure from the strict rules of the common law. Instead, the rule adopted in California, which recognizes the priority of appropriation as the foundation of the right to the use of running water, is the clearest principle of justice (Id.).

Justice Lewis did not, however, reject the common law doctrine of riparian rights. Neither Lobdell nor Simpson were riparian landowners in the common law sense, because neither had title to the land except as a mere occupant of public land. "What we might hold," said Justice Lewis, "if the plaintiff had relied upon his rights as a riparian proprietor, and claimed the water of the creek by ownership of the soil, it is unnecessary to say at present. We wish it understood, however, that the views expressed in this opinion are applicable only to those cases where the parties rely solely on the prior actual appropriation of water, which seems to be the case here" (Id.).

The riparian doctrine was discussed in two later cases, *Ophir Silver Min. Co.* v. *Carpenter* [4 Nev. 534, 543 (1869)] and *Covington* v. *Becker* [5 Nev. 281, 282–3 (1869)], but again, the court did not apply the common law doctrine to the facts of the case. In 1872, in the case of *Vansickle* v. *Haines* [7 Nev. 249 (1872)], the court held that the common law was the law of Nevada and must prevail in all cases in which the right to water was based on absolute ownership of the soil (Hutchins 1977). In its decision, the court examined the Mining Act of 1866 [14 U.S. Stat. 253, § 9 (1866)], which states in part:

> That whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of the courts, the possessors and owners of such vested rights shall be maintained and protected in the same; ...

The court stated that the local custom of prior appropriation did not affect federal lands before the 1866 act. Therefore, any patent issued by the United States before the Mining Act conveyed not only the land but also the stream naturally flowing through it. It was conceded, however, that titles acquired from the government after 1866 were subject to the local system of water-rights ownership.

In 1885, the court reversed its interpretation of the 1866 act in the case of *Jones* v. *Adams* [19 Nov. 78, 6 Pac. 442 (1885)]. In *Jones*, the court held that the Mining Act of 1866 was not intended to introduce any new system or policy on the part of the general government. Instead, the Mining Act only confirmed the system already established by local customs, laws, and decisions of the courts, and provided for its continuance.

Since 1885, the appropriation doctrine has been recognized exclusively with reference to use of waters of surface streams. However, there was still an issue as to the validity of final decrees of riparian rights decided between 1872 and 1885, when courts followed the *Vansickle* interpretation of the Mining Act. In 1895, the Federal Circuit Court for the District of Nevada held that final and unreversed decrees of riparian rights were settled between the parties and their successors in interest, remaining as valid existing rights [*Union Mill and Mining Co.* v. *Danberg*, 81 Fed. 73, 116 (C.C.D. Nov. 1897)]. Following the ruling in *Union Mill and Mining Co.* v. *Danberg*, there may be valid riparian rights where federal land was transferred to the private sector before 1866, and the court issued a decree at some time between 1872 and 1885 recognizing a valid riparian right.

Administration of Water Rights

The first efforts of the Nevada Legislature to administer water rights were limited to the enactment of statutes that required recording. An 1866 statute provided for county records of certificates of intention to construct or maintain ditches or flumes (Nev. Laws 1866, ch. 100). It was not until 1889 that the legislature enacted the first bill providing a statutory scheme for the appropriation of water (Nev. Laws 1893, ch. 97). The act provided for the distribution of water by court decree, recording statements of existing claims, issuance of water-rights certificates, and judicial determination of water-rights priorities (Hutchins 1977). The 1889 act was repealed 4 years later.

In 1899, a new act empowered the county boards of commissioners with the sole authority to grant applications for the appropriation of water. The boards consisted of the county commissioners and the county surveyor, with the chairman of the board of county commissioners serving as the chairman of the county water board.

The Office of the State Engineer was created in 1903 (Nev. Laws 1903, ch. 4). The duties were both advisory (to cooperate with the U.S. Secretary of the Interior in all irrigation works) and administrative (to examine proofs of appropriation claims).

In 1913, the legislature passed a comprehensive water act, the basis of present law as codified in the Nevada Revised Statutes (N.R.S., ch. 48). Under this act, an appropriator must make an application to the State Engineer for a permit. A notice of application is published, and any interested person may file a protest and obtain a hearing. This procedure is the exclusive method for appropriating water in Nevada.

Appropriation of Instream Flow

In the 1913 statutory scheme, the only absolute requirement for a valid appropriation of water is that the water must be put to some beneficial use (N.R.S. 533.030). However, before 1988, courts had construed the statute to include an actual diversion of water as another absolute requirement [*Prosole* v. *Steamboat Canal Co.*, 37 Nev. 154, 140 Pac. 720 (1914)]. This requirement precluded the opportunity to appropriate instream water rights [Nev. Attorney General Opinion 83-15 (10-28-1983)]. The absolute diversion requirement was a holdover from earlier mining days. Before the enactment of any appropriation statutes, rights were acquired by actually diverting water for a beneficial use. The requirement of diversion was necessary to provide notice to other water users that a right had been claimed.

In December 1988, however, the Nevada Supreme Court upheld the State Engineer's grant of an instream water right to the Bureau of Land Management (BLM) for the Blue Lake fishery in the mountains of northwestern Nevada [*State* v. *Morros*, 766 P. 2d 263 (Nev. 1988)]. The court reasoned that under statutory provisions for the appropriation of water, beneficial use is the only essential requirement for the appropriation of water in Nevada, and the court would not infer a diversion requirement where no such requirement appears expressly in the statutes.

Agencies and Commissions with Jurisdiction and Authority Over Water Resources

Overview

All state functions regarding the appropriation of water, adjudication of rights, and distribution of water are the responsibility of the State Engineer, who is the executive head of the Division of Water Resources within the Nevada State Department of Conservation and Natural Resources (DCNR).

The Division of Environmental Protection (DEP), part of the DCNR, is designated as the state water pollution control agency for all purposes of federal water pollution control legislation. The authority to adopt water quality standards, however, is the exclusive power of the State Environmental Commission, an independent commission appointed by the governor.

The Nevada Department of Wildlife (DOW) also has permit authority over matters affecting

instream flows or regarding the capture or destruction of species threatened with extinction. Any person who plans a project that will alter or damage the natural shape of a stream system must receive a permit from the department. The department also administers rules promulgated by the State Board of Wildlife Commissioners, which has the authority to establish policy for the protection and management of wildlife.

Other agencies and groups have the opportunity to affect water planning in Nevada. For example, the Washoe County Council of Governments and the Tahoe Regional Planning Authority have local control of water quality administration. There are also ad hoc committees such as the Governor's Drought Committee, which circulates work sheets regarding the availability of water supplies, and the Truckee Basin Water Committee, which meets monthly to discuss the operation of the Tahoe Reservoir. The key to the administration of water rights in Nevada, however, is the Office of the State Engineer.

Department of Conservation and Natural Resources

The Director of the Department of Conservation and Natural Resources (DCNR) coordinates divisional programs, appoints executive heads for all divisions under its jurisdiction, and adopts regulations necessary for the administration of divisions (N.R.S. 232.070). The director appoints the State Engineer and the head of the DEP, which are the primary agencies regarding water decisions. Divisions under the department include the Division of Water Resources (DWR), Division of Conservation Districts, DEP, and Division of Water Planning (DWP) (N.R.S. 232.100–.138).

Division of Water Resources

The State Engineer is the executive head of the Division of Water Resources (DWR), responsible for allocating water in the state, and empowered to make rules governing practice and procedure in all water matters and contests before the office (N.R.S. 532.140).

The State Engineer is authorized to divide the state into water districts, organized to insure the best protection of water users and the most economical supervision on the part of the state [N.R.S. 533.300(1)]. The Engineer can appoint an advisory board of representative citizens within each district, the boards to assist in formulating plans and projects for the conservation of water resources [N.R.S. 533.300(2)]. The State Engineer divides water among the several streams and reservoirs according to the rights of each and appoints water commissioners to regulate head gates to ditches or controlling works to state and private reservoirs to ensure proper distribution of water (N.R.S. 533.305).

The relative rights to the use of water along a stream are determined by the State Engineer, who can order an investigation of stream flow and receive evidence regarding rights to use water, then issue a preliminary order of determination establishing the rights of each claimant. After hearings are held, the Engineer can enter an order of determination and file the order with the original evidence in the Nevada State District Court. The decree will be final within 3 years from the date of entry (N.R.S. 533.090–.265).

In deciding whether to grant a permit, the State Engineer is limited to the language of the appropriation statute (N.R.S. 533.370). A permit must be approved unless there is no unappropriated water in the source of supply, the proposed use or change conflicts with existing rights, or the change may be detrimental to the public interest. The State Engineer, however, has broad discretionary authority in deciding whether a condition is sufficient to deny a permit. This is especially true where the Engineer finds a diversion is detrimental to the public interest because the public interest is not expressly defined by statute. On appeal, the decisions of the State Engineer are given a high degree of deference [*State* v. *Morros*, 766 P.2d 263 (1988)].

Nevada law also provides the Office of the State Engineer with enforcement and arrest powers. Anyone willfully tampering with a head gate or water box may be found guilty of a misdemeanor. To prevent unlawful diversions, the State Engineer can employ guards and charge their salaries against the owners of the ditch (N.R.S. 533.465–.475).

Division of Water Planning

The Division of Water Planning (DWP) provides political subdivisions and private enterprises in arid regions with information about regional shortages of water, including feasible courses of planning and action for acquiring additional water or for conserving available water (N.R.S. 540.051). The division also advises the DCNR and the state legislature concerning economic and social effects of water policy (N.R.S. 540.051).

State Environmental Commission

The Nevada State Environmental Commission consists of 10 members, including the Director of the Department of Wildlife, the State Forester Firewarden, the Executive Director of the State Department of Agriculture, the State Engineer, the Executive Director of the State Department of Minerals, a member of the State Board of Health, and four members appointed by the governor from the general public (N.R.S. 445.451).

The commission is empowered to adopt regulations necessary to carry out the provisions of the Nevada Water Pollution Control Law, including standards of water quality and amounts of waste that may be discharged into state waters (N.R.S. 445.201), the actual enforcement of which is carried out by DEP.

Division of Environmental Protection

The Division of Environmental Protection (DEP) is the state water pollution control agency for purposes of federal water pollution control legislation (N.R.S. 445.211). The duty of the director is to administer and enforce regulations adopted by the State Environmental Commission, examine and approve plans for the construction of new treatment works, and develop comprehensive plans for preventing, reducing, or eliminating pollution (N.R.S. 445.214).

The division has the authority to issue conditional permits to control the discharge of pollutants into streams or wells. Each permit must ensure compliance, whenever possible, with effluent limitations, standards of performance for new sources, standards for pretreatment, standards for injections of fluids through a well, and any more stringent limitations developed as part of an area wide plan for the management or treatment of waste (N.R.S. 445.221–.241).

The director may seek injunctive relief, civil and criminal penalties, or issue compliance orders to enforce water quality rules and regulations. Nevada law also authorizes a private cause of action against any person causing pollution. Any resident may commence an action to enforce compliance with any statute, regulation, or ordinance for the protection of air, water, and other natural resources (N.R.S. 41.540).

Board of Wildlife Commissioners

The Board of Wildlife Commissioners consists of seven members appointed by the governor (N.R.S. 501.167) one each actively engaged in farming, ranching, and the conservation of wildlife, and two each who represent the interests of sportsmen, and of the general public (N.R.S. 501.171).

The duties of the commission include the establishment of broad policies for the protection and management of wildlife in the state, as well as the acquisition of water rights, lands, and easements (N.R.S. 501.181). The commission may enter into cooperative agreements with adjoining states (N.R.S. 501.182). It is also the duty of the commission to adopt regulations necessary for the protection of wildlife (N.R.S. 501.105) and the classification of threatened and endangered species (N.R.S. 501.110).

Department of Wildlife

The Department of Wildlife (DOW) was created to administer the wildlife laws of the state (N.R.S. 501.331). The director is appointed by the governor from among three nominated by the Board of Wildlife Commissioners (N.R.S. 501.333).

The DOW has permit authority over any project that threatens to destroy a wildlife habitat. Before a permit is granted, the DOW has the

opportunity to aid in preparing adequate plans and specifications for the project (N.A.C. 504.520, 502.550).

The DOW also has permit authority over dredging operations in any river, stream, or lake in the state (N.R.S. 503.425). A permit for dredging operations will be issued only if the department finds that the operations will not be deleterious to fish or other wildlife.

Federal Water Master

The Federal Water Master is appointed by the U.S. District Court for the district of Nevada to administer federal court decrees on the Carson and Truckee rivers. The federal court created the position in 1926 to administer the court's rulings in the Truckee River litigation known as the Orr Ditch case. The Federal Water Master operates the Boca, Stampede, Prosser Creek, and Martis reservoirs and Lake Tahoe. The water master controls irrigation ditches by establishing flow entitlement at river headgates, maintains measuring stations at most ditches and insures decree allocations are not exceeded. In addition to operational duties, the Federal Water Master maintains a file of water-rights ownership on both rivers.

Irrigation Districts

The Nevada Irrigation District Act (N.R.S. Ch. 539) provides for the formation and administration of irrigation districts to supply water to those within their areas. The board of directors of an irrigation district may appropriate water, construct dams, and acquire property for the distribution of water (N.R.S. 539.207; 539.230). The board may fix rates of change and incur debt sufficient to meet the obligations voluntarily assumed by the landowners within the district (N.R.S. 539.493 et seq.).

A majority of the holders of title to lands susceptible of one mode of irrigation from a common source or combined sources may propose the organization of an irrigation district. Every signer of a petition shall be the holder of title to at least 2.03 ha (5 acres) of land within the proposed district (N.R.S. 539.020). When, within a proposed irrigation district, there exists one or more tracts of land owned and used by the state of Nevada for state purposes and susceptible of the same mode of irrigation, the governor, with the advice of the State Engineer, may sign a petition for the organization of such irrigation district (N.R.S. 539.023).

A petition to organize an irrigation district is presented to the board of county commissioners for the county in which the lands are situated (N.R.S. 539.025). Upon completion of a hearing, the board shall make an order denying or granting the petition (N.R.S. 539.043). District directors are elected by qualified landowners within the district. An elector must be the holder of title to at least 2.03 ha (5 acres) of land with an appurtenant surface water right (N.R.S. 539.123).

The board of directors may appropriate water, construct dams, and acquire property for the distribution of water (N.R.S. 539.230). The board has the power to establish bylaws, rules, and regulations for the distribution and use of water in the district, and to compel water users, at their expense, to install measuring devices to make a proper distribution of water (N.R.S. 539.233). At least once a year the board of directors shall make a report to the State Engineer, who shall make such suggestions and recommendations to the board as may be necessary to conserve the best interests of the district (N.R.S. 539.205).

The irrigation districts are also empowered to cooperate and contract with the United States under the Federal Reclamation Act and other Acts of Congress for any of the following purposes:

1. construction of works, whether for irrigation or drainage or both;
2. acquisition, purchase, extension, operation, or maintenance of constructed works;
3. water supply;
4. electric power and transmission lines; or
5. assumption as principal or guarantor of indebtedness to the United States on account of district lands or for the collection of moneys due the United States as fiscal agent or otherwise (N.R.S. 539.273).

Opportunities to Protect Instream Flows and Wetland Uses in Nevada

Appropriation of Water for Instream Uses

Opportunity

Any federal, state, or local agency, as well as public interest groups, may file an application with the State Engineer to appropriate an instream water right. Requirements for an appropriation include that there is unappropriated water available, there is no adverse effect to holders of current water rights, the appropriated water is put to a beneficial use, and the appropriation will not violate the pubic interest. In Nevada, beneficial uses include livestock watering, recreation, and the protection of fish and wildlife.

Background

The majority of today's water rights in Nevada were acquired before the enactment of any appropriation statute. These nonstatutory appropriations were made by actually diverting the water from the stream with the intent to apply the water to a beneficial use. The requirement of diversion was necessary to provide notice to other water users that a water right had been claimed (Hutchins 1977).

The Nevada Legislature enacted legislation in 1913 providing an exclusive procedure for making an appropriation of stream water. The statute provides that water may be appropriated only for beneficial use as provided (N.R.S. 533.030). While the statute provides that beneficial use is the only absolute requirement, courts, before 1988, had interpreted the statute to require an actual diversion as necessary for a valid appropriation of water. This requirement precluded the opportunity to appropriate instream water rights [Nev. Attorney General's Opinion 83-15 (10-28-1983)].

On 21 December 1988, the Nevada Supreme Court upheld the State Engineer's grant of an instream water right to the BLM for the Blue Lake fishery in the mountains of northwestern Nevada. The court reasoned that, under the statutory provisions for the appropriation of water, beneficial use is the only essential requirement for the appropriation of water in Nevada and, therefore, a diversion is not necessary. Further, the court recognized that under Nevada law public recreation is a beneficial use of water. Public recreation, according to the court, includes the protection of fisheries as well as the need to provide wildlife with water [*State* v. *Morros*, 766 P.2d 263 (Nev. 1988)].

Example

The application to appropriate the waters of Blue Lake is one of the first examples of appropriation of water for instream uses. Blue Lake is a natural scenic area in northwestern Nevada consisting of about 6,480 ha (16,000 acres) of public lands administered by the BLM. In 1977, after a number of public meetings, the BLM closed the Blue Lake area to protect the natural values of the area until a wilderness review could be completed. On 7 November 1980, the BLM designated the Blue Lake as a wilderness study area. As of this date, the Blue Lake area has not been designated a wilderness area, but the BLM has been able to appropriate an instream water right recognized under state law to protect the area [*Humboldt County* v. *United States*, 684 F.2d 1276, 1279 (9th Cir. 1982)].

The Blue Lake application was one of a number of applications filed by the BLM in an aggressive effort to appropriate waters on public lands in Nevada (Nevada BLM News Release, 12 April 1979). In 1979, it was estimated that the BLM would file 6,000 to 9,000 applications for water permits with the State Engineer [Nev. Attorney General Opinion No. 83-15 (10-28-1983)]. On 26 July 1985, the Nevada State Engineer approved a number of appropriative water-rights applications of the BLM to appropriate water for stock and wildlife watering purposes, and an application to appropriate the waters of Blue Lake, a natural lake in Humboldt County, Nevada, for public recreation and fishery purposes [*State* v. *Morros*, 766, P.2d, 26 (Nev. 1988)].

The Attorney General of Nevada, on behalf of the Nevada State Board of Agriculture and other parties, sought judicial review challenging the State Engineer's decisions. In an order entered on 5 February 1987, the district court upheld the State Engineer's approval of the Blue Lake application, but reversed his decisions approving the

applications to appropriate water for stock and wildlife watering purposes because water was not diverted and the BLM did not own the stock. In a decision filed 21 December 1988, however, the Nevada Supreme Court affirmed the State Engineer's grant of the Blue Lake application and reinstated the State Engineer's decisions regarding livestock and wildlife applications [*State* v. *Morros*, 766, P.2d, 26 (Nev. 1988)].

Evaluation

Any person, as defined by Nevada statute, may apply for an instream appropriation. This includes federal and state agencies as well as public interest groups and private citizens.

As a practical matter, however, there is little unappropriated water in Nevada. Where water is available, any water rights acquired by appropriation will have a recent appropriation date. These new water rights will not be fulfilled until all senior water-rights holders have their share. In dry years, there is a good chance water will not be delivered to junior appropriators. Therefore, a contemporary appropriation of instream flow does not ensure that stream levels will be protected unless senior water users are downstream of the opportunity reach. An appropriation does, however, protect the stream against subsequent appropriations and gives the appropriation a legal basis to challenge senior users' changes in place of diversion, place of use, or type of use, if detrimental to the junior instream right.

State Engineer's Power to Protect Public Interest

Opportunity

Nevada water law authorizes the State Engineer to reject any application that adversely affects existing rights or otherwise threatens to prove detrimental to the public interest (N.R.S. 533.070). Where a proposed application threatens an instream flow right or a future need for one, the State Engineer has the power to reject the application on his own initiative.

Background

The State Engineer has discretion in determining whether or not to accept an application for a permit. The State Engineer must grant the permit unless

1. the application is not accompanied by prescribed fees;
2. the proposed use or change adversely affects the cost of water or other holders of water rights in the district or lessens the district's efficiency in its delivery of water;
3. there is no unappropriated water in the proposed source of supply;
4. the proposed use or change conflicts with existing rights; or
5. the proposed use or change threatens to prove detrimental to the public interest (N.R.S. 533.370).

In spite of the mandatory language of the statute, the State Engineer has broad discretionary authority in deciding when a sufficient condition exists to deny a permit. For example, the State Engineer has the opportunity to consider instream flow values when deciding whether an application threatens to prove detrimental to the public interest. The public interest is not specifically defined in the Nevada Water Act. There are, however, statements of legislative policy in other sections that list the protection of fish and wildlife as important state goals. For instance, N.R.S. 501.100(2) states: "The preservation, protection, management, and restoration of wildlife within the state contribute immeasurably to the aesthetic, recreational, and economic aspects of these natural resources." And N.R.S. 501.181(3)(c) states that establishing policies pertaining to the acquisition of water rights for the management, propagation, and restoration of wildlife is included among the duties of the Nevada Board of Wildlife Commissioners.

Interested persons also have the opportunity to become involved in the decision-making process by filing a written protest against the granting of any application that interferes with instream flows. Whenever an interested person files a protest against an application, the State Engineer must consider the protest when making a decision. A written protest must be filed with the State Engineer within 30 days of the last publication of the notice of application. The State Engineer may hold hearings and require the filing of evidence necessary for an understanding of the rights involved (N.R.S. 533.365).

Example

To date, the State Engineer has never denied a permit solely on the grounds that the proposed use will interfere with instream flows, but is willing to consider instream flow values on an individual case basis when reviewing water permits.

Evaluation

The State Engineer can deny a permit on public interest grounds, but has not been willing to do so. As a matter of practice, the transfer of water rights and ability to change the use of a point of diversion are necessary for the economic development of the resource. The State Engineer, when considering the public interest, includes economic interest as well as instream values. Therefore, instream values have not outweighed economic development in the State Engineer's analyses. Instream values, then, are more likely to be protected if they qualify as vested rights by either appropriation or purchase. This could change, however, depending on new views about what constitutes the public interest.

Interested parties can protest the State Engineer's decision whenever the grant of a permit would be detrimental to instream flows. There are no examples of a decision to grant a permit being reversed in order to protect instream flows. There are, however, a number of other decisions that have been successfully challenged.

Purchase and Lease of Water Rights

Opportunity

Any party, including state and federal agencies, may enter into contractual arrangements for the purchase or lease of water rights. The acquired water rights can be used to augment existing water sources, or the purchase of a senior right can ensure delivery to a downstream location.

Background

Any water right, which has been fixed either by actual diversion and application to beneficial use or by appropriation according to the manner provided by law, is a right protected as property [*In re Filippin*, 202 P.2d 535, 537, 66 Nev. 17 (1949)]. Any person, then, can purchase or lease water rights from another. However, any purchaser intending to change the place of diversion, manner of use, or place of use must apply for and obtain a permit from the State Engineer (N.R.S. 533.345).

Any person, group, or agency can purchase water rights to augment existing water sources because wildlife and recreation are beneficial uses of water. For instance, water currently used for irrigation purposes may be purchased for delivery to a wetland area. Where direct purchase is not practical, water rights may be leased during particularly dry years, leaving the water for agricultural use at other times.

Example

The DOW has been involved with the purchase of water rights for recreational use for some time. This may involve purchasing storage rights as well as return flows from irrigation and spring sources for hatcheries and wild fisheries. For instance, Elko and Lauder Counties have purchased water rights for recreational pools in South Fork and Rock Creek reservoirs.

Private groups have purchased, or plan to purchase or lease water rights for wetlands areas in western Nevada including Stillwater Wildlife Management Area, Carson Lake, and the Fernley Wildlife Management Area. The Nevada Water Fowl Association has purchased 43 dam^3 (35 acre-feet) of water for use in the Stillwater Wetlands Management Area. It has applied for a change permit and is awaiting a decision from the State Engineer.

In addition, Congress has directed that water rights be purchased for Stillwater Wetlands Management Area. A Congressional bill to repair flood-damaged dikes at Stillwater Wetlands Management Area was amended so a portion of the funds could be used to acquire water rights in place of part of the construction project.

Evaluation

The purchase or lease of senior water rights to protect instream flows is especially useful along fully appropriated stream systems. The purchase not only protects instream flows in situations where no water is available for appropriation, but also a purchase of water rights provides the opportunity to obtain a right with a senior appropriation date. A senior appropriation date has two

advantages regarding protection of instream flows. First, a senior owner should receive delivery before all junior appropriators regardless of location on the river. This will provide greater protection in dry years. Second, the strategic placement of a senior right for use in a downstream area may have the effect of protecting instream values along other stretches of the river because the water must be delivered to the downstream use before other appropriators may divert the flow. If this is possible, protection of instream flows will not necessarily require the purchase of large quantities of water.

The major cost of this strategy is the price of the water right. A Bureau of Indian Affairs analysis calculates the cost of acquiring 25,890 dam^3 (21,000 acre-feet) for Pyramid Lake fish at $16.8 million. Wildlife officials estimate it will take 67,200 dam^3 (54,500 acre-feet) of water at a cost of $30 to $50 million to save the state's major wetlands complex.

Laws enacted by the 1989 Nevada Legislature should facilitate the lease or purchase of water rights. One law provides authority for temporary, 1-year transfers of water rights, which would enable acquisitions of water rights for wetlands or instream flows during drought periods. Another law authorizes the issuance of substantial amounts of state bonds for the acquisition of water rights for wetlands, instream flows, and maintenance of habitat for sensitive species.

The purchase or lease of a water right does not guarantee that the State Engineer will grant a permit change, however. While instream flows and wetland uses are beneficial uses of water, the State Engineer may decide that a change of use or point of diversion may injure junior appropriators. For instance, the change of a senior right to a downstream location will deny junior appropriators who have relied on that senior's return flows for their water. This could result in wasted time and money for persons structuring a water purchase. The State Engineer cannot issue prospective rulings regarding a permit change. Therefore, a person must find available water rights for sale, then apply to the State Engineer for a permit. Any purchase of water rights, then, should be conditioned on the grant of a permit change.

It is important that any water rights purchased are active, as opposed to inactive, rights. In Nevada, any water rights acquired after 1913 are subject to abandonment after 5 years of nonuse (N.R.S. 533.060). Rights vested before 1913, however, the date of the Nevada water statute, are not subject to strict forfeiture requirements. These rights are lost only if there is a proven intent to abandon and relinquish such right. Nonuse is not sufficient to show abandonment [*Franktown Creek Irrigation Co.* v. *Marletta Lake Co.*, 77 Nev. 348, 364 P.2d 1069 (1961); *In re Manse Spring*, 60 Nev. 280, 108 P.2d 311 (1940)]. While inactive rights are available to purchase, it is unlikely the State Engineer will allow these rights to be activated, because the activation of these rights would affect downstream or junior appropriations. Any purchaser of active water rights should also take the extra precaution to require a deed restriction on the seller's appurtenant land stating that no other water rights may be activated to replace the purchased rights.

Leasing presents an opportunity to obtain water rights at a lower cost, but is not without problems. For example, farmers in the Newlands Project, a likely source of water rights for lease, have expressed concern that leasing would be impractical because alfalfa, the major crop in the area, requires 5 years of continuous growing to develop a healthy root system. Thus, leasing on an intermittent basis could ruin 5 years' worth of alfalfa.

Use of Groundwater to Protect Wetlands Areas

Opportunity

Any federal, state, or local agency, as well as any person, can purchase groundwater rights for delivery to wetland areas providing the purchaser is granted a permit from the State Engineer (N.R.S. ch. 534).

Background

Underground water rights, like surface water rights, are vested water rights, which may be purchased, leased, or assigned (N.R.S. 534.010–.100). These rights also are subject to the statutory appropriation system. Any change of use or change in the place of use must be approved by the State Engineer. Groundwater sources include un-

tapped aquifers as well as diversions of tapped groundwater currently used for other purposes.

Example

Wells and water rights are held on the Mason Valley Wildlife Management Area to augment wetland flows during draught years. Some of these water rights have now been converted to operate the new Mason Valley Hatchery and provide return flows to the management area wetlands.

Evaluation

Any augmentation plan using groundwater presents a number of problems. Pumping and delivering groundwater is expensive. There is also the threat of water mining where water is drawn at a rate faster than the rate of discharge. This creates an unreliable source of water in future years and toxic minerals in the soil may be drawn into the water system. The mining of water may also contribute to lowering a stream within the hydrologic system.

In addition, groundwater augmentation plans are more practical for wetland areas than for instream flows. Fish habitats are sensitive systems and groundwater may be incompatible with the stream environment where different minerals and different temperatures in the groundwater could be harmful to fish populations.

Efficient Delivery and Use of Water

Opportunity

More efficient delivery and use of water would free water for instream flow and wetland uses.

Background

Conservation and reduction of waste cannot increase the overall supply of water. However, efficient management can make the limited supply more available for more water uses and users. Opportunities for more efficient use of water include the maintenance of tight controls over the amount of water delivered, improved delivery systems that reduce loss through soil percolation, taking marginal farms out of production, improved irrigation and usage techniques, and rehabilitating stream banks.

Conservation measures not only increase the amount of water available, but improve the quality of the water by reducing both pollutant loading and concentration problems. Loading occurs when excess water is diverted for irrigation and the return flow is degraded because the water leaches salts, pesticides, and nutrients from the soil. Pollutant concentration increases when excess water is diverted and lost to evaporation and the pollutant load in the stream is left more concentrated. (Pring and Tomb 1979).

Rehabilitation of stream banks can improve water quality and the efficiency of delivery in stream channels. Rehabilitation such as planting vegetation and building instream pools and structures can help lower stream temperature, an important factor in successful fish spawning. The increased vegetation would take water from the stream, but it is possible that the temperature reduction due to shade would offset the loss of water due to evapotranspiration.

Example

A major area of concern regarding the efficient use of water is the Newlands Reclamation Project. It is estimated that 40–45% of the water diverted to Newlands in the early 1980's was lost due to evaporation, seepage, leaks, and spills (Buchanan and Coleman 1987). Conservation measures could save up to 61,650 dam^3 (50,000 acre-feet) annually. The Bureau of Reclamation has issued operating controls and procedures (OCAP) that are expected to cut projectwide water losses to 33% by 1991 (Secretary Record of Decision, 15 April 1988).

Water may also be saved by retiring marginal farmland in the Newlands project. Likely candidates include those farms that either contain poor soil or are at the edge of the project. Some farms are 48.27 km (30 miles) from the supply source and two thirds of the water delivered can be lost when traveling through 48.27 km (30 miles) of canals. Efficiency can be increased by taking farms out of production when they comprise only a few diversions at the end of a long canal.

Evaluation

There is no guarantee that conservation measures alone will benefit instream flow. For water conservation to directly benefit instream flow, there must be an appropriation of an instream flow

right, the purchase of an agricultural right with a change to instream beneficial use, or a legislative or court order directing that water be used for instream purposes. Otherwise, the saved water might be used by junior appropriators or appropriated and diverted for other uses that may be detrimental to instream flow.

There are other legal and economic barriers inherent in the appropriation system that, without specific government regulations, may make it difficult to employ conservation measures. There is no economic incentive for a senior agricultural water user to spend money for conservation measures. The amount of the water right is fixed by permit and based on historical use. Any money spent for conservation will not increase the amount of the water right or increase the monetary value of the permit. If anything, conservation may be viewed as lowering the amount (and therefore value) of the right (Pring and Tomb 1979).

A specific legal barrier is the ban on water meters in the Las Vegas and Reno-Sparks area. The state legislature banned meters in Reno in 1919 and in Sparks in 1939 (N.R.S. 704.230). The legislature has recently required water meters on all Reno-Sparks homes built after 1 July 1988. Another act of the legislature is necessary to further repeal this prohibition and open up this opportunity.

Still, there are opportunities to conserve water and protect instream flow in spite of the legal and economic barriers, especially when conservation measures are considered with other instream flow opportunities. For instance, groups planning to purchase water rights for instream flow or wetland uses can target rights appurtenant to marginal farmland, thus reducing the amount of water used for irrigation and producing the dual benefit of increased water quality and quantity.

Water is a scarce commodity in Nevada and conservation measures are necessary, but there is less agreement on the costs and benefits of these strategies. For example, whereas Westpac Utilities claims that water meters can save 15–20% on water consumption, a state Public Service Commission order views Westpac's estimates as overstated.

The cost and benefits of river rehabilitation are also questioned. The rehabilitation of the lower Truckee River will be expensive ($50 million) and probably will not work unless enough water is allowed to flow through the lower river to maintain the cooler temperatures. However, the Pyramid Lake Paiute Tribe believes that rehabilitation on a small scale can bring beneficial results.

Nevertheless, conservation measures are necessary to preserve the quantity and quality of water in Nevada. The alternative is to have less water available in the system or water of such poor quality as to destroy fish populations and even negatively affect consumptive agricultural, municipal, and industrial uses.

State Protection of Fish Habitats

Opportunity

State agencies have the opportunity to consult with federal agencies where a federal action may damage natural streams or wetland areas.

Background

The National Environmental Policy Act (NEPA) requires that all federal agencies consider the environmental consequences of their major actions before approving any project or plan that could significantly affect the environment (42 U.S.C., § 4331 et. seq.). To this end, regulations promulgated by the Council on Environmental Quality (CEQ) detail specific procedural requirements for the decision-making process (40 C.F.R. § 1500). The review begins with the scoping process, where the agency determines the need for an Environmental Assessment (EA) if no significant effects are expected, or a full-blown Environmental Impact Statement (EIS) if significant effects are expected.

CEQ regulations provide opportunities for state and local agencies to become involved in the review process. Early in the review process (the scoping stage), CEQ regulations state that the lead agency shall consult with appropriate state and local agencies and Indian tribes to avoid delays and head off potential conflicts (40 C.F.R. § 1501.2). Where an EIS must be prepared, the lead agency must invite the participation of state and local agencies and any affected Indian tribe in the scoping process (40 C.F.R. § 1501.7). The scoping process identifies significant issues for further study.

State and local agencies also have the opportunity to present comments during the prepara-

tion of the draft EA or EIS and to describe alternatives to agency action (40 C.F.R. § 1503). The lead agency, in preparing the final EA or EIS, must respond to the comments (40 C.F.R. § 1503.4).

The lead agency is required to make diligent efforts to involve the public in the environmental review process. After the lead agency has decided that an EA or EIS must be prepared, notice must be published in the *Federal Register* and sent to interested and affected members of the public. The lead agency must then hold a public hearing regarding the draft, and where the lead agency finds there will be no significant effect, the lead agency must allow for public review before it becomes effective. Interested persons disagreeing with the finding may submit comments and court challenges to the EA or EIS.

Example

The DOW has been involved with the consultation process regarding the EIS for the Newlands Project Proposed Operating Criteria and Procedures. The Operating Criteria and Procedures would provide increased stream flows for endangered and threatened fish at Pyramid Lake. The DOW has been particularly vocal in advocating the protection of wetlands at Stillwater Wildlife Management Area and associated state waterfowl management areas (letter dated 5 August 1986 from W. Molini to D. Houston included in the Newland Final Environmental Impact Statement [1987]).

Evaluation

State and local agencies have the opportunity to enter the decision-making process at an early stage to advocate for instream and wetland values, and the agencies may gain significant leverage if they do so. However, economic considerations may discourage agencies from early participation. The cost of this opportunity includes the time and money spent to prepare studies, identify issues, and describe alternatives to the lead agency. Because federal agencies must prepare studies as part of the environmental assessment, state agencies, often on limited budgets, can wait to see if it is necessary for them to become involved, as the NEPA process provides several distinct opportunities for input or legal challenge.

Water Quality and Pollution Control

Opportunity

The relation between water quality and quantity provides another means to protect instream flows. Attaining water quality standards depends in part on regulating the quantities of point and nonpoint pollutant sources. Maintenance of instream flow quantities may allow dischargers to meet their permit requirements by diluting pollutant levels in streams. In addition, the attainment of water quality standards will, by reducing contaminants in return flows, help ensure that present instream flow quantities will sustain fish and wildlife.

Background

When Congress enacted the Federal Water Pollution Control Act in 1972 (42 U.S.C. § 1251 et seq., now the Clean Water Act 33 U.S.C. § 1251 et seq.), its major focus was to encourage state administration of the National Pollution Discharge Elimination System (NPDES). State administrative functions were further strengthened by the Water Quality Act of 1987 (33 U.S.C. § 1311), requiring all NPDES permits comply with water quality standards developed by the state.

Nevada has implemented the Clear Water Act (CWA) by establishing a statewide permit system for those who discharge pollutants into surface- and groundwaters (N.R.S. ch. 445). Standards are designed to protect the designated beneficial stream uses applicable to each stream segment in the state (N.R.S. 445.244). To this end, state waters are divided into four classifications.

Class A waters are located in areas of little human habitation, no industrial development or intensive agriculture, and where the watershed is relatively undisturbed by human activity. Class B waters are located in areas of light or moderate habitation, light or moderate agricultural development, and light industrial development. Class C waters are located in areas of moderate to urban habitation, where moderate industrial development is present and the watershed is considerably altered by human activity. Class D waters are located in urban, highly industrialized areas. Effluent sources include a variety of waste dis-

charges from a highly altered watershed (N.R.S. 445.122–.125).

Aquatic life is considered in the standards for all classifications of streams. Specific criteria must define the conditions necessary for the propagation of fish, shellfish, and other wildlife where the objectives are reasonably obtainable (N.R.S. 445.244). However, the State Environmental Commission can use antidegradation standards (N.R.S. 445.253) and site-specific regulations (N.R.S. 445.253) in order to protect the quality of specific fishery areas.

In addition to its regulatory authority, the commission is authorized to consult with other state and federal agencies (N.R.S. 445.201). The commission may also hold hearings, issue notices, and subpoena witnesses for the purpose of reviewing standards of water quality (N.R.S. 445.224).

It is the duty of the DCNR through the DEP to issue and enforce permits in compliance with the guidelines adopted by the State Environmental Commission (N.R.S. 445.264).

Upon application for a permit, the department shall notify appropriate government agencies and interested persons, allowing them the opportunity to submit written views and recommendations (N.R.S. 445.267). Each applicant, interested agency, or other person must have the opportunity to request a public hearing (N.R.S. 445.317).

The Nevada Water Control statutes also have a number of enforcement provisions. Whenever the director finds that any person is engaged in or is about to engage in any act that violates a regulation or permit condition, the director may issue an order seeking compliance, seek injunctive relief, or request the attorney general to institute a criminal prosecution.

Example

The department has enforcement powers, but takes more of an advisory role, working with applicants to achieve water standards using the best available technology. For instance, the Pyramid Lake Paiute Tribe currently has a lawsuit against the cities of Reno and Sparks, which claims the cities' joint treatment plant contaminates the Truckee River. The return flow from the joint treatment plant is an important component of the stream flow below the cities, and the quality of the return flow has a substantial effect on Pyramid Lake fish. The DEP recognizes that there is a problem with increased nitrogen and phosphate levels from the Truckee Meadows, and its solution involves working with the cities to achieve compliance with water quality standards. The Reno–Sparks plant installed new denitrification equipment in the summer of 1988.

Evaluation

The purpose of Nevada water quality laws is to require compliance with water standards, but the emphasis is on advisement and cooperation rather than enforcement through use of penalties and prosecution. Therefore, it is important for all interested parties to become involved early in the decision-making process to classify streams, identify special circumstances, and impose necessary conditions on permits. This may prevent diversions of water that would reduce stream flows and increase the concentration of pollutants, and ensure that return flows will not be harmful to fish and wildlife.

This opportunity does have significant limitations. Water quality standards do not generally apply to discharges of pollutants from agricultural activities, including irrigation return flow and runoff (N.R.C. 445.140). This excludes a major source of water pollution in Nevada from state regulation under the Water Quality Act.

Riparian Rights

Opportunity

The riparian rights doctrine, which grants riparian landowners certain rights to use water in the watercourse, was recognized in several decisions rendered by the Nevada Supreme Court before 1885 (Hutchins 1977). While the Nevada Supreme Court reversed its earlier decisions and rejected the riparian doctrine in 1885, surface riparian rights adjudicated in actual cases before 1885 may still be valid rights today (Ohrenschall 1969). Where valid riparian rights exist, persons may have an opportunity to block any appropriation that adversely affects these rights, which could help preserve instream flows or wetlands.

Background

In 1872, the Nevada Supreme Court applied the riparian doctrine to a dispute between a riparian and nonriparian user [*Vansickle* v. *Haynes*, 7 Nev. 249 (1872), overruled by *Jones* v. *Adams*, 19 Nev. 78, 6 Pac. 442 (1885)]. In *Vansickle*, the court held that section 9 of the Federal Mining Law of 1866 created new rights in water. Therefore, a patent from the United States granted before 26 July 1866 conveyed to the settler all rights not only in the patented land, but also in any water course flowing across the land. The court stated, however, that riparian rights acquired from patents issued after 26 July 1866, were subject to preexisting rights, including claims based on the appropriation doctrine.

The Nevada Supreme Court, in the case of *Jones* v. *Adams*, reversed its interpretation of the Federal Mining Law of 1866 and held that the act did not create new rights in water. Instead, the act only confirmed the prior appropriation system already established by local custom as the only system in Nevada for the acquisition of water. There was still an issue, however, as to the validity of court decrees between 1872 and 1885 that recognized riparian rights as valid. This was settled in 1897 when a federal circuit court held that final and unreversed decrees of riparian rights, whether legal or not, could no longer be contested between the parties and their successors in interest [*Union Mill and Mining Company* v. *Danberg*, 81 Fed. 73, 116 CCD Nev. (1897); Hutchins 1977].

It is possible that large private landholdings existing along the Humboldt River and its tributaries acquired by federal railroad grants may have existing riparian rights to water (Ohrenschall 1969).

Example

There is no example where riparian rights have been asserted since 1885.

Evaluation

Information regarding this opportunity has been available in published form since 1955, but no one has asserted riparian rights in Nevada. This opportunity appears now to be historical curiosity although, in theory, it could be a powerful tool for instream flow and wetlands preservation.

State and Federal Protection of Endangered Species

State Listing of Endangered Species

Opportunity

The presence of an endangered species provides a number of opportunities to protect instream flows. The DOW can protest applications for diversions where the diversions will be harmful to listed species. It can also appropriate or purchase water rights in order to protect listed species.

Background

Under Nevada law, wildlife may be classified as protected, threatened, endangered, or sensitive (N.R.S. 501.110). The classifications listed in N.A.C. 503.065–.06 (1988) are in Appendixes A–C.

Once a species is declared threatened with extinction, no member of its kind may be captured, removed, or destroyed at any time by any means except under special permit. The Nevada endangered species statute also requires state agencies to administer their programs to aid endangered species (N.R.S. 503.585). The state lists a number of threatened or endangered fish, but this in itself does not protect instream flows, as the DOW has no authority over private property or vested water rights.

Example

The DOW can take steps to protect fish habitats supporting endangered species. It can protest any applications for diversions that may be harmful to endangered species, calling on the State Engineer to exercise his discretionary permit authority. It can also purchase water rights to protect endangered species. For example, the DOW has purchased water rights on three springs to protect the habitat for the Warm Springs pupfish (*Cyprinodon nevadensis pectoralis*) in Ash Meadows.

Evaluation

The state laws protecting endangered species are potentially useful for protecting instream flow, but the state list has provided little in the way of

results (as the DOW cannot take away a person's right to appropriate without compensation). The list of endangered species does, however, give a focus to the DOW management programs to the extent that the DOW can use other instream opportunities, such as the purchase of water rights, to protect endangered species.

Federal Endangered Species Act

Opportunity

Under the Endangered Species Act (ESA), state and federal agencies have the opportunity to ensure that permits or licenses for federal projects listed, as well as activities subject to federal permits or funding, are conditioned on the protection of instream flow as a means of protecting listed species.

Background

The ESA provides a means to protect listed species whose existence is threatened by federal projects. Permits or licenses for new projects may be conditioned on protection of instream flow as a means to protect listed species. In addition, all federal departments and agencies must manage existing projects so as to conserve endangered species. While this opportunity is generally applicable to state and federal agencies, other interested persons can be involved in the decision-making process.

The ESA requires that each federal agency shall ensure that any action authorized by a subagency is not likely to jeopardize the continued existence of any endangered or threatened species (16 U.S.C. § 1536). Each agency, before construction of a project, must request of the U.S. Secretary of the Interior whether any species listed as endangered or threatened may be present in the proposed area. If the secretary advises that an endangered species may be present, the agency must conduct a biological assessment [16 U.S.C. § 1536(c)]. Generally, this assessment is undertaken as part of the agency's compliance with the requirements of the National Environmental Policy Act, and interested parties have an opportunity to introduce comments for consideration. Where a biological assessment is conducted separately or in lieu of an environmental assessment, interested parties still have the opportunity for comment.

The ESA also applies to the management of existing projects. The secretary shall use programs administered by him to further the conservation purposes of the ESA [16 U.S.C. § 1536(a)(1)]. In reclamation projects, for example, environmental concerns may supersede reclamation regulations.

Example

The case of *Carson–Truckee Water Conservancy District* v. *Watt* [537 F. Supp. 106. (D. Nev. 1982) aff'd, 741 F.2d 257 (9th Cir. 1984), *cert. denied*, 470 U.S. 1083 (1985)] provides an example of this opportunity. The construction of Stampede Dam, part of the Washoe Reclamation Project, was authorized by Congress in 1956, and the dam was completed in 1970. In 1965, before the dam was constructed, the Carson–Truckee Water Conservancy District and the United States entered into a contract to repay the United States for most of the project costs in exchange for delivery of water. Due to faulty planning, however, the limited water supply of the Little Truckee River was over appropriated. All of the planned allocations could not be satisfied. Therefore, the Secretary of the Interior, in order to satisfy his obligation under the ESA and his trust responsibility to the Pyramid Lake Paiute Tribe, ordered that the reservoir be operated only for the benefit of the endangered species of Pyramid Lake and for limited flood control (Buchanan and Coleman 1987).

The water conservancy district sought a declaratory judgment that the secretary, in refusing to sell water, violated reclamation laws. The conservancy district argued that the secretary was only authorized to take actions that avoid jeopardizing the continued existence of an endangered species and may not do more than that. The U.S. District Court for the District of Nevada held that the ESA directs the secretary to conserve threatened and endangered species to bring them to the point that they are no longer threatened. Therefore, the secretary is authorized to give priority to the fish until such time as they no longer need ESA protection [537 F. Supp. 106 (D.C. Nev. 1982), *aff'd in part, vacated in part*, 741 F.2d 257 (9th Cir. 1984), *cert. denied*, 470 U.S. 1083 (1985)]. The U.S. Ninth Circuit Court of Appeals affirmed the decision, stating that ESA sections 2(b), (c), 3(3), and 7(a)(1)

direct the secretary to actively seek to conserve endangered species.

Evaluation

While the Nevada Legislature recognizes the value of protecting endangered species, there is little the legislature or state agencies have chosen to do for the protection of fish habitats outside the statutory scheme for the appropriation and purchase of water. State agencies do have the opportunity to become involved in the federal decision-making process, but they have been reluctant to do so. The cost of preparing reports is expensive and may duplicate work already required of federal agencies.

As a practical matter, the success of this opportunity has been due to the actions of public interest groups, Indian tribes, and the Federal Government. However, there are limits to the protection afforded by the ESA. For instance, the 9th Circuit has held that the Navy's irrigation practices at a Nevada air base did not violate the ESA or NEPA. [*Pyramid Lake Paiute Tribe* v. *U.S. Dep't of the Navy*, No. 88-1650 (9th Cir. Mar, 19, 1990)]. The Navy, in an effort to reduce dust-storms and other aviation risks at the air base, created buffer zones by leasing irrigated land to local farmers. The Pyramid Lake Paiute Tribe claimed that the irrigation practices harmed the cui-ui sucker (*Chasmistes cujus*), listed as an endangered species, because the irrigation water was diverted from a tributary of Pyramid Lake. The court held that the Navy properly relied on U.S. Fish and Wildlife Service biological opinions in making its determination under ESA § 7(a)(2) that the leasing program would not likely jeopardize the existence of the cui-ui. Further, the court held that the Navy's refusal to adopt an alternative to its leasing program that would require less water did not violate the Navy's obligation under ESA § 7 (a)(1) to develop programs to conserve endangered species.

Interstate Allocation of Water

Opportunity

Traditionally, interstate conflicts over water can only be settled through a compact, congressional allocation, or lawsuit. Each method provides the opportunity to protect a variety of streamflow activities. Cooperative planning and regulatory authority in an interstate organization, formed by compact or congressional decree, can lead to instream flow maintenance and enhancement without the necessity of costly interstate litigation.

Background

Nevada is a member of three commissions to negotiate interstate compacts allocating water rights to river systems crossing state borders. The Colorado River Commission, established in 1935, was formed to negotiate and administer rights to the Colorado River and its tributaries (N.R.S. 538.041 et seq.). The Columbia Basin Interstate Compact Commission was established in 1951 (N.R.S. 538.420). And the California–Nevada Interstate Compact Commission was established in 1955 to negotiate the allocation of waters in the Carson, Truckee, and Walker River basins (N.R.S. 538.280).

An interstate compact will not be effective until it is ratified by Congress. To date, only the Colorado River Compact has been enacted. Nevada's use of the Colorado River is governed by the Rio Grande, Colorado, and Tijuana Treaty of 1944 with Mexico, and by the Colorado River Compact of 1922.

Nevada's use of Colorado River water is also subject to congressional allocation. In 1928, Congress enacted the Boulder Canyon Project Act, 43 U.S. 617–617t intended to apportion the lower Colorado River among California, Nevada, and Arizona, leaving the tributaries under state jurisdiction. This Act allocates 369,900 dam^3 (300,000 acre-feet) of water per year to the state of Nevada for consumptive use within the state.

Example

The Truckee River settlement negotiations illustrate how instream flow values can become part of an interstate allocation. In 1955, California and Nevada began negotiating allocation of interstate waters. The compact was ratified by the states, but Congress never ratified the California–Nevada Compact, in large part due to opposition from the Pyramid Lake Paiute Tribe. The tribe claimed the interstate allocation as represented in the compact would have been the death blow to Pyramid Lake and its once magnificent fishery.

The California–Nevada Interstate Compact Commission reached an agreement as to the form of the proposed compact in 1968. As part of the proposal, the Pyramid Lake Paiute Indian Reservation would receive 36,900 dam^3 (30,000 acre-feet) annually from the Truckee River to the extent it could be used for irrigation. However, in 1969, the governors of Nevada and California introduced a plan that would have reduced the already shrunken Pyramid Lake by a third.

Their agreement called for draining water from Pyramid Lake into a neighboring dry lake bed to reduce Pyramid Lake's surface area from 44,500 ha (110,000 acres), its approximate surface area today, to 28,350 ha (70,000 acres). Reducing Pyramid Lake's surface area, claimed the governors, would reduce water loss due to evaporation. The tribe, then, would need less water to maintain the smaller surface area. Congress refused to ratify the plan.

The next-to-last attempt to save the California–Nevada Compact came in 1985 when the Truckee River Settlement Act of 1985 was presented to the Senate as Senate Bill 1558. As part of the agreement, Congress was asked to ratify the compact.

The Pyramid Lake Paiute Tribe not only opposed the compact, but also opposed portions of the agreement that would give away storage space in Stampede Reservoir despite the Paiute victory in court that dedicated Stampede water to the preservation of Lahontan cutthroat trout (*Onchohynchus clarki* ssp) and cui-ui. Congress refused to pass Senate Bill 1558, claiming it could not pass the bill if the parties involved could not come to agreement. The last attempt to save the compact, also unsuccessful, came in 1986.

The failure of the Truckee River Settlement Act did not end the negotiations. The major parties to the settlement talks have been trying to reach a consensus as to the allocation of water. In addition, these talks have included consideration for instream values and protection of the Pyramid Lake fishery.

In order to protect the fishery, there must be enough water available for fish to spawn. In the past, the steady decline of Pyramid Lake elevation exposed a delta at the mouth of the Truckee River, making it impossible for cui-ui and cutthroat trout to spawn. The minimum levels suggested in the 1985 proposal were almost 6–9 m (20–30 feet) below those that are now deemed necessary to protect the fish. Under the current settlement talks, the Pyramid Lake Paiute Tribe is presenting a number of options to maintain the Pyramid Lake fishery. These include better management of the water system, so that the timing of releases meets fish spawning needs and provides more efficient use of the resource.

In May 1989, the Pyramid Lake Paiute Tribe and Westpac Utilities signed the Truckee River agreement, which is an important step in any interstate allocation of the waters of Lake Tahoe and the Truckee and Carson rivers. The agreement gives the Pyramid Lake Paiute Tribe use of various Sierra reservoirs, which opens the way for a steadier flow of water to Pyramid Lake. In return, Westpac gains access to 48,700 dam^3 (39,500 acre-feet) in Stampede Reservoir, providing a drought-year reserve for use in Truckee Meadows. The agreement is not binding, however, unless certain contingent events occur. First, the state legislature must repeal the law banning water meters on all Reno–Sparks homes occupied before 1 July 1988. Second, Reno, Sparks and Washoe Counties must formulate a conservation plan to implement a 10% savings in drought years. Third, Congress must approve a parallel agreement that buys water for Stillwater wetlands, improves downstream Truckee River fish habitat, and divides Lake Tahoe and the Carson and Truckee rivers between Nevada and California.

Evaluation

The form of any interstate allocation of water between Nevada and California is uncertain at this time. However, any allocation will most likely involve congressional action. An interstate compact would bind the states, but it would not resolve the concerns about federal and Indian uses of water. It would be too difficult to accommodate traditional notions of federal and tribal sovereignty and to subject that sovereignty to an independent government organization created by a six state compact. Other forms of settlement, through congressional action, would avoid the institutional concerns inherent in negotiating and ratifying another interstate compact (Kramer 1988).

The example of the Truckee River shows that instream flows can be an issue in an interstate allocation of water. The success of this strategy

depends on the involvement of a sovereign entitled to water ownership rights at issue between the states. Public interest groups can apply pressure to state and federal interests to protect instream flows, but it is the sovereign, like the Pyramid Lake Tribe in this example, who must actively pursue instream values.

Cooperative Management of Reservoirs

Opportunity

Water managers have the opportunity to consider cooperative measures in the planning of storage and release of water as a means of protecting instream flow.

Background

Cooperative management techniques include the use of storage credits, timely release of flows to meet actual demand, and more efficient use of flood storage. There are a number of barriers to a cooperative management system. In many cases, cooperative management will require modification of court decrees or the support of water-rights owners. However, cooperative management of storage facilities offers the opportunity to protect instream flows without importing water into the system.

Because reservoirs in the Truckee–Carson system are subject to specific uses, operating procedures, and court decrees, it is not always possible to operate reservoirs efficiently. For instance, Lake Tahoe, Prosser Creek Reservoir, and Boca Reservoir are subject to the 1935 Truckee River Agreement, which requires a minimum flow of 14,150 L/s (500 cfs) in the river at the state line from April through September, regardless of actual demands by domestic users. Donner and Independence Pass reservoirs are jointly owned by Westpac Utilities and the Truckee–Carson Irrigation District. This privately stored water is used when Truckee flows and Lake Tahoe releases cannot meet demand. With cooperative planning techniques, instream values could be enhanced with existing water supplies.

Example

Adjustments in the timing of releases from Lake Tahoe from February to May would increase the spawning success of the cui-ui and Lahontan cutthroat trout in the Truckee River. In the past, the Pyramid Lake fishes were given little consideration in the management of the Truckee River, as regulation of the river halved the flow to Pyramid Lake. As a result of diversions in combination with droughts, Pyramid Lake receded to its lowest depth in nearly 4,000 years. As the lake receded, a delta formed at the mouth of the Truckee, and Pyramid Lake fish were able to migrate upriver only in high-water years.

Adjustment of the release rates would be one step toward early releases from Lake Tahoe to match the increased water requirements needed for spring spawning activities. Because Pyramid Lake water interests do not have a right to Lake Tahoe, water adjustment of release rates alone would not guarantee increased flows to Pyramid Lake. In addition to an adjustment of release rates, a downstream storage facility such as Lahontan Reservoir would have to promise not to take the early release in return for a storage credit to be used at a later date. Changing flow rates might adversely affect power plants, but the deficit could be made up with power generated from Stampede Dam (Reno Gazette–Journal, 21 August 1988).

Cooperative management could benefit municipalities as well as fisheries. For instance, water from Stampede Reservoir is currently used to satisfy the Federal Government's responsibility to protect the listed Pyramid Lake fish. If flows adequate for spawning fish were met with releases from Lake Tahoe instead of Stampede, there would be an increase in available storage space for the Reno–Sparks water supply in most years.

Early releases could also benefit property owners in the Tahoe area. A high water level increases erosion, affecting the quality of Tahoe's water and damaging the shoreline. Maintaining a high water level in Lake Tahoe can cause damage because of large flood control releases to the river system as well as to adjacent property.

Evaluation

This opportunity is best suited to the Truckee–Carson river system, where storage facilities are an integral part of water management. The success of this opportunity, however, depends on a modification of the legal and contractual obligations currently in effect.

There are a number of agencies and public interest groups exploring the possibilities for cooperative reservoir management in the Truckee–Carson river system. In addition, the Bureau of Reclamation can implement a water exchange program between Prosser Creek and Stampede. Any changes in the operation of the Truckee River, however, must be approved by the Federal District Court for the District of Nevada. As a practical matter, any cooperative measures will probably result from a negotiated settlement on the ownership rights to the Truckee River. Where the old decrees are modified to the extent required by new laws such as the ESA, the Federal Government may have to pay just compensation, but this is not likely.

Once legal barriers are removed, cooperative management can be an effective tool for protecting instream flows. While additional water supplies may not become available in the near future, water managers will be able to direct the quantity and quality of water in a more timely fashion.

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Opportunities Under the Public Trust Doctrine

by

George A. Gould

Introduction

Stated simply and very generally, the public trust doctrine expresses the concept that a state owns or holds certain resources in trust for the public. That is, the state owns these resources not as a proprietor, but as a trustee. Consequently, the state is not free to deal with a trust resource as it might deal with other state property, such as an office building; rather, the trust imposes duties and limitations on the state with regard to the use of the resource. More specifically, these duties and limitations become important when the state conveys the resource to private parties or creates private rights in it.

The public trust doctrine has particular relevance for the protection of instream flows because historically, the doctrine has been concerned with the protection of public rights in waters. Nevertheless, the doctrine is not a panacea. It is not recognized in all jurisdictions, and the effect of the doctrine varies greatly where recognized. The doctrine has substantial limitations, even in those jurisdictions that have embraced it most enthusiastically. Furthermore, the doctrine is a developing one; in no state is it fully fleshed out. As in all developing common law (judge-made) doctrines, courts borrow heavily, but selectively, from other jurisdictions, making results unpredictable. The subsequent discussion sets forth the doctrine, followed by a discussion of the doctrine's application in Nevada.

Navigable Waters

Before examining the public trust doctrine, a bit of explanation concerning navigable waters is in order because of the doctrine's traditional association with navigable waters. The concept of navigation serves several functions in American jurisprudence, and the definitions or criteria used to determine navigability frequently vary, depending on the function that is being served. Nevertheless, a determination that a body of water is navigable is essentially a determination that it is a public, as opposed to a private, body of water. In effect, this means that the general public has the right to use that body of water for some purposes.

The special importance of navigable waters may be difficult to appreciate today. Such waters, however, were the principal means of commerce and travel until this century. Consequently, the policy of preserving them as open public highways is certainly understandable in a historical context.

Under English common law, the Crown owned navigable bodies of water. When the American colonies gained their independence from England, they succeeded to the ownership of the beds of navigable waters as successors in interest to the Crown. Moreover, the United States Supreme Court held that new states admitted to the Union became the owner of the beds of navigable bodies of water within their boundaries under the equal footing doctrine.

American federalism further complicates the matter. Although the states succeeded to ownership of the beds, the Federal Government retained paramount control over the use of interstate waters pursuant to its powers over interstate commerce. This paramount control is typically called the navigation servitude. While both the navigation servitude and the public trust doctrine have roots in the concept of navigability and, to some extent, represent similar concerns, the two are not to be confused. Of major significance, the navigation servitude has not been construed to impose any duties on the Federal Government or limita-

tion on the uses that the Federal Government authorizes others to make of navigable waters. A detailed examination of the navigation servitude is beyond the scope of this discussion. The servitude is mentioned here principally for purposes of completeness.

Development of the Public Trust Doctrine—the Illinois Central Railroad Case

Some legal scholars have traced the public trust doctrine to either Roman law of Emperor Justinian or English common law. Other scholars have expressed doubt that the doctrine was a part of the law of Rome or England, at least not in a form that bears a resemblance to the current doctrine. All scholars agree, however, that American origins of the doctrine are found in the case of *Illinois Central Railroad* v. *State of Illinois* [146 U.S. 387 (1892)], decided by the United States Supreme Court in 1892. Even today, courts frequently refer to this case when discussing the doctrine. Thus, it merits examination in some detail.

The *Illinois Central* case resulted from a statute enacted by the Illinois Legislature in 1869 that gave 405 ha (1,000 acres) of the bed of Lake Michigan, composing almost the entire Chicago waterfront, to the railroad. Four years later, the legislature thought better of the matter and repealed the statute. As could be expected, the railroad asserted that the legislature had no right to take back the waterfront. The Supreme Court, however, upheld the legislature's right to revoke the grant. The court stated that the state's title to lands under a navigable body of water was different in character from its title to lands that the state held for sale. The title to these lands, the court said, was held "in trust for the people of the state that they may carry on commerce over them, and have liberty of fishing therein, freed from the obstruction or interference of private parties."

As has often been the case where the public trust doctrine is involved, the *Illinois Central* decision raises more questions than it answers. The decision makes it clear, however, that a state is prohibited from conveying absolute title to the bed of a navigable body of water or, at least, having made such a conveyance, is permitted to revoke its conveyance, **in some cases**. The bold face words in the prior sentence emphasize that the court did not invalidate all conveyances of trust property. The court expressly stated that grants of lands for wharves, piers, docks, and other structures in aid of commerce, and grants that do not impair the public interest in the lands and waters remaining, are valid.

One other aspect of the decision merits discussion at this point; its effect, or lack thereof, on the Illinois treasury. Even without the public trust doctrine, the legislature could have taken back the waterfront through an exercise of the power of eminent domain. By finding that the grant was revocable, however, the Supreme Court permitted the legislature to reacquire the tract without exercising the power of eminent domain and without complying with its attendant requirement to pay compensation to the railroad. The potential to avoid the payment of compensation, because there has been no taking of property, is an important feature of the public trust doctrine.

For many years following the *Illinois Central* decision, the public trust doctrine remained an arcane body of law that dealt only with the beds of navigable bodies of water. Moreover, it was principally a land use doctrine, rather than a water law doctrine, meaning that it dealt with the beds of navigable waters and not with the waters themselves. In recent years, however, the doctrine has experienced a major expansion. A variety of new resources and new uses have been encompassed within the doctrine, and the doctrine has been seen as a major device in efforts to protect the environment. Nevertheless, the doctrine remains closely tied to navigable waters in most jurisdictions.

State Law or Federal Law

The source of law applied in *Illinois Central* was not made clear by the court. One might suppose in reading the opinion that the court was applying federal law, perhaps even federal constitutional law. In a later case, *Appleby* v. *City of New York* [271 U.S. 364 (1926)], however, the court stated that the *Illinois Central* decision was based

on Illinois law, not federal law, although it did not identify any particular Illinois constitutional provision, state statute, or common law rule. In any case, today it is generally assumed that the public trust doctrine is a matter of state law. Thus, the doctrine is not a single uniform body of law binding on all states; rather, each state is free to reject the doctrine or to accept it in whatever form the state chooses.

Property Subject to the Trust

As previously noted, the public trust doctrine historically applied only to the beds of navigable waters. Recent decisions have extended it to other resources, such as beaches, parks, and even all natural resources. For instream flow purposes, however, only two extensions are important: the extension of the waters subject to the doctrine, and extension of the trust to the water itself, rather than just the beds of water.

Under the equal footing doctrine, a state received title to the beds of water that were navigable in fact at the time the state was admitted to the Union. The Supreme Court has said that waters are navigable in fact if they are used, or susceptible of being used, in their ordinary condition, as highways for trade or travel [*The Daniel Ball*, 77 U.S. 557 (1871)], a much more liberal definition than the English definition, which restricts navigability to waters that are subject to the ebb and flow of the tide. Many states, however, adopted even more liberal tests of navigability, such as the pleasure boat test. A state owns only the beds of waters that are navigable under a federal test because navigability for purposes of determining title to the beds of watercourses is a question of federal law. Nevertheless, the public trust doctrine has usually been extended to waters navigable under more liberal state tests.

The first indication that the public trust applied to the water itself occurred in a 1976 decision, *United Plainsmen Ass'n* v. *North Dakota State Water Conservation Comm.* [247 N.W.2d 457 (1976)]. That decision, however, was rather narrow in scope, holding only that the North Dakota State Water Conservation Commission must engage in water planning to determine the effects of allocation on present water supplies and future water needs before it could issue permits for the appropriation of water.

The principal decision on this issue is the *Mono Lake* case. [*National Audubon Society* v. *Superior Court of Alpine County* (89 Cal. Rptr. 346 (1983)]. In this case, the Audubon Society argued that the diversion of water by the City of Los Angeles from four of the five tributaries supplying Mono Lake was causing extensive environmental damage to the lake and was in violation of the public trust doctrine. Los Angeles replied that it had a permit from the state of California, issued in 1940, which authorized these diversions. It further argued that the public trust doctrine had been completely subsumed by the California water rights statutes. The California Supreme Court disagreed, holding that consumptive water rights are subject to the public trust doctrine. The court further held that because the effects of these diversions on a trust resource, Mono Lake, had not been considered when the permits were issued in 1940, it was proper to consider them now.

The decision further expanded the scope of the doctrine by holding that it could be applied to water in nonnavigable tributaries, to prevent harm to navigable bodies of water. The court expressly refused, however, to consider whether the doctrine might extend to nonnavigable tributaries themselves.

Trust Purposes

Historically, the public trust doctrine protected the public's rights to use navigable waters for navigation, commerce, and fishing. Recent decisions, however, have expanded the protection to all sorts of activities related to water, including hunting, swimming, rafting, boating, and bathing, and even to preserve tidelands "in their natural state so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area" [*National Audubon Society* v. *Superior Court of Alpine County*, 87 Cal. Rptr 346 (1988)]. On the other hand, in the case just cited, the California Supreme Court limited trust

purposes to activities in the vicinity of trust waters and refused to extend the trust to all public uses, stating that if this were done the doctrine would, as a practical matter, impose no restrictions on the state's allocation of trust property. Some courts, however, have simply equated trust purposes with public purposes, thereby effectively emasculating the doctrine.

Limitations Imposed by the Public Trust Doctrine

In some cases, the public trust doctrine appears to be primarily a procedural device. One of the leading advocates of the doctrine, Professor Joseph Sax, emphasized its procedural nature as a device for correcting imperfections in the democratic process. As Sax explained it, misallocation of resources sometimes occurs because a small, organized minority takes advantage of a diffused, disorganized majority. Courts apply the doctrine to prevent misallocation, typically by referring the decision to a governmental body with a more broadly based constituency, perhaps even the legislature itself (Sax 1970). For example, courts have held that a grant by an administrative body that is contrary to a trust purpose is not valid, unless it is supported by clear statutory authority. This has the effect of requiring legislative approval for any grant of trust resources for which there is not clear statutory authority. Another approach reverses the usual presumption of administrative regularity where a decision contrary to the public trust is involved, thus placing the burden on the agency to show that it acted in accordance with law.

On the other hand, the public trust has frequently been given substantive content, as it was in *Illinois Central.* That decision indicates that the state of Illinois cannot convey the Chicago waterfront absolutely and irrevocably, no matter what the procedure involved. Even where given a substantive effect, however, the doctrine does not invalidate all grants of trust property. Building on themes developed by the Supreme Court in *Illinois Central,* courts have held that those grants that carry out trust purposes or that do not substantially impair trust purposes are valid. A related approach holds that a grant of trust property conveys title, but the property remains subject to a servitude, which prohibits the use of the property in a manner that is inconsistent with trust purposes, and which permits the state to subject the property to trust uses at some time in the future. Still another approach is to require that the trust purposes be carefully considered and negative effects minimized when making grants of trust property.

Because the effect of the public trust doctrine on consumptive water rights is of particular importance where instream values are concerned, the *Mono Lake* decision merits further examination. In that decision, the court acknowledged that the appropriation and diversion of water "does not promote, and may unavoidably harm, the trust uses at the source of the stream." The court also acknowledged, however, the importance of the appropriation of water to the population and economy of the state. Consequently, in an effort to accommodate water use and the public trust doctrine, the court held that the state "has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible."

The formula that the California Supreme Court articulated essentially imposes a balancing test in which the state's need to appropriate and divert water is weighed against trust purposes on an individual case basis. As such, the doctrine appears to be little different from California's long-standing requirement that the Water Resources Control Board consider the public interest when granting permits for the appropriation of water; however, it differs from the requirement in two important respects. First, according to the court, the public trust doctrine imposes on the state a duty of continuing supervision over the appropriation and use of water. Thus, the state is not confined by past allocation decisions, but has the power and the responsibility periodically to reconsider the effect of existing appropriations on trust resources and values and to require adjustments in existing uses to protect trust purposes where appropriate. Second, the state is apparently powerless to dispense with its trust obligations, unlike its power to repeal (legislatively) statutes requiring the Water Resources Control Board to consider the public interest.

Application of the Public Trust Doctrine

The identification of a resource as a trust resource and the determination that a particular activity is protected by the doctrine is only the first step. The next step is to determine what legal significance this has. As an initial matter, it appears that the public trust doctrine is significant in two general ways. First, it may provide a legal basis for state regulation of a resource. Second, it may provide grounds for challenging the actions of either the state or a private party.

The public trust doctrine would not seem to be an important source of state power to regulate for the purpose of protecting instream flows. Modern interpretations of the police power of states probably provide a sufficient basis for such regulation. Furthermore, in western states, constitutional or statutory enactments creating state or public ownership of water provide an additional basis for state regulation. Nevertheless, in a case where regulation is questionable, the public trust doctrine might provide an additional argument for upholding regulation. For example, if a state with a very strong constitutional tradition for the appropriation of water by private persons were to enact legislation providing for instream flow protection of some sort, the public trust doctrine might be relied on, at least in part, as authority for the legislation.

The doctrine could aid state regulation in one additional way. A regulatory scheme that imposes new limitations or requirements on existing water rights, such as a statute requiring all irrigators to take specified steps to conserve water, may be attacked as an unconstitutional taking of property. As discussed below, however, the public trust doctrine usually avoids the taking issue. Consequently, it could provide a judicial rationale for upholding such regulation in the face of a constitutional attack.

Historically, the public trust doctrine has been used principally to challenge the actions of the state (state agencies) or private parties with regard to trust resources. Modern developments in administrative law, such as liberal standing rules and the hard look standard of judicial review, may have rendered the public trust doctrine largely superfluous where state action is challenged, although the doctrine may provide a basis for imposing substantive duties or limitations on a state agency in a few cases.

The doctrine's greatest effect has been in cases challenging private parties. The challenge may be raised by another private party, as was done in *Mono Lake*, or it may be raised by the state, as was done in *Illinois Central*. The private party who holds title to the trust property will normally assert that his title is vested property that cannot be taken or diminished without the payment of compensation. The public trust doctrine, however, typically eliminates any obligation to pay compensation. The reasoning is that the title the private party received from the state was subject to a limitation in favor of the public. Thus, nothing is taken when the superior trust interest is asserted to terminate or diminish the private party's rights. As the California Supreme Court said in *Mono Lake*, a party "can claim no vested right to bar recognition of the trust or state action to carry out its purposes."

This power to apply the limitations of the public trust retroactively without a taking of property makes the doctrine a uniquely powerful tool. Because of the doctrine, the state of Illinois was able to take back the Chicago waterfront without payment of compensation. Similarly, water rights granted to Los Angeles 45 years ago may be terminated or limited to protect Mono Lake, without the payment of compensation.

The Public Trust Doctrine and Instream Flows

The public trust doctrine has many potential applications as a strategy for preserving instream flows.

1. The doctrine might form the basis for an argument that a state water rights agency is required to consider the effect of a proposed appropriation on instream values before granting a permit authorizing the appropriation. This strategy could be particularly important in a state that does not

have a statute requiring the agency to consider the public interest when granting permits, or in a state where the public interest does not include consideration of environmental values.
2. As a variation of the first example, the doctrine might be used as the basis for requiring the adoption of alternatives that maximize the use of existing diversions before granting new appropriations. For example, a municipality might be required to engage in recycling and conservation before being permitted to make new appropriations.
3. The doctrine might be used to prevent the destruction of aquatic habitat. For example, a stream channelization project might be prohibited because it violates the public trust.
4. The doctrine could be used to terminate or limit existing water uses that are particularly harmful to instream values, as may be done in the Mono Lake case.
5. The doctrine might be used as the legal basis for legislation creating a statewide program of water conservation.

In assessing the effectiveness of the doctrine in these or other situations, the many limitations of the doctrine must be considered. For example, if a particular state applies the doctrine only to the beds of watercourses that are navigable under the federal test, or if it limits the trust to traditional purposes, such as commerce, the doctrine may be of little use in protecting instream flows. Furthermore, in many jurisdictions it will be impossible to ascertain the state of the law because there are no decisions, or perhaps only a single, limited decision, addressing the doctrine.

The Public Trust Doctrine in Nevada

Nevada law declares the water supplies of all sources of water supply within the boundaries of the state, whether above or beneath the surface of the ground, belong to the public [N.R.S. 533.025]. In addition, the Nevada Supreme Court declared that the state holds the lands below the ordinary high water mark of navigable rivers in trust for public use [*State* v. *Bankowski*, 88 Nev. 623, 503 P.2d 1231 (1972); *State Engineer* v. *Cowles Bros., Inc.*, 86 Nev. 872, 478 P.2d 159 (1970)].

However, state control of waters and submerged lands is limited to the extent that the state must recognize vested water rights. As early as 1903, the Nevada Supreme Court stated that conservation of water is the order of the day, will increase the population and wealth, and is for the public good. However, conservation must not be pushed to the extent of depriving one of water already acquired by prior appropriation to a beneficial use [*Tonkin* v. *Winzell*, 27 Nev. 88, 99, 100 73 Pac. 593 (1903)]. Of course, in 1903, conservation most likely meant that water should be put to its highest and best use as measured by economic gain. Nevada has come a long way in recognizing instream values as a beneficial use. Still, state control of water is limited by the recognition of vested rights.

Because of the strong bias Nevada has traditionally exhibited towards the exploitation of natural resources and its strong recognition of vested rights, the public trust doctrine probably does not provide a strategy for protecting instream flows in Nevada.

Appendix A. Protected fishes

Scientific name (common name)

Catostomidae (Suckers)
- *Pantosteus clarki intermedius* (White River Mountain sucker)
- *Xyrauchen texanus* (Humpback sucker)

Cyprinidae (Minnows)
- *Eremichthys acros* (Desert dace)
- *Lepidomeda albivallis* (White River spinedace)
- *Lepidomeda mollispinis mollispinis* (Virgin River spinedace)
- *Lepidomeda mollispinis pratensis* (Big Spring spinedace)

Cyprinodontidae (Killifishes)
- *Crenichthys baileyi* ssp. (Southern White River springfish)
- *Crenichthys baileyi albivallis* (Preston White River springfish)
- *Crenichthys nevadae* ssp. (Railroad Valley springfish)

Appendix B. Endangered fishes

Scientific name (common name)

Catostomidae (Suckers)
Chasmistes cujus (Cui-ui)

Cyprinidae (Minnows)
Gila robusta elegans (Colorado bonytail chub)
Gila robusta jordani (Pahranagat roundtail chub)
Moapa coriacea (Moapa dace)
Plagopterus argentissimus (Woundfin)
Ptychocheilus lucius (Colorado squawfish)
Rhinichthys osculus nevadensis (Ash Meadows speckled dace)

Cyprinodontidae (Killifishes)
Cyprinodon diabolis (Devil's Hole pupfish)
Cyprinodon nevadensis mionectes (Ash Meadows pupfish)
Cyprinodon nevadensis pectoralis (Warm Springs pupfish)
Empetrichthys latos latos (Pahrump poolfish)

Appendix C. Sensitive fishes

Scientific name (common name)

Catostomidae (Suckers)
- *Catostomus clarki* ssp. (Meadow Valley Wash desert sucker)

Cyprinidae (Minnows)
- *Gila bicolor* ssp. (Big Smokey Valley tui chub)
- *Gila bicolor* ssp. (Fish Lake Valley tui chub)
- *Gila bicolor* ssp. (Hot Creek Valley tui chub)
- *Gila bicolor* ssp. (Little Fish Lake Valley tui chub)
- *Gila bicolor* ssp. (Railroad Valley tui chub)
- *Gila bicolor euchila* (Fish Creek Springs tui chub)
- *Gila bicolor isolata* (Independence Valley tui chub)
- *Gila bicolor newarkensis* (Newark Valley tui chub)
- *Gila bicolor obesa* (Lahontan tui chub)
- *Gila robusta* ssp. (Moapa roundtail chub)
- *Gila robusta seminuda* (Virgin River roundtail chub)
- *Rhinichthys osculus lariversi* (Big Smokey Valley speckled dace)
- *Rhinichthys osculus lethoporus* (Independence Valley speckled dace)
- *Rhinichthys osculus moapae* (Moapa speckled dace)
- *Rhinichthys osculus oligoporus* (Clover Valley speckled dace)
- *Rhinichthys osculus velifer* (Pahranagat speckled dace

Salmonidae (Trouts)
- *Oncorhynchus clarki utah* (Bonneville cutthroat trout)
- *Oncorhynchus mykiss gibbsi* (Interior redband trout)

Note: ssp. indicates a previously undefined or unnamed subspecies. Names follow the December 1989 list recommended by the American Fisheries Society.

Publications in the "Opportunities" Series

Title	Publication number	Status
Instream Flow Strategies for:		
Arizona	FWS/OBS-78/35	Available[a]
Nevada	FWS/OBS-78/40	Available
New Mexico	FWS/OBS-78/41	Available
North Dakota	FWS/OBS-78/42	Available
South Dakota	FWS/OBS-78/44	Available
Utah	FWS/OBS-78/45	Out of print
Opportunities to Protect Instream Flows in:		
Alaska	FWS/OBS-82/33	
Nebraska and Kansas	FWS/OBS-83/02	Available
Minnesota and Iowa	FWS/OBS-83/07	Available
Georgia	FWS/OBS-83/20	Available
Michigan and Wisconsin	FWS/OBS-83/21	Available
Texas, Oklahoma, and Arkansas	FWS/OBS-83/22	Available
Maine	Biol. Rep. 85(9)	Available
Idaho, Oregon, and Washington	Biol. Rep. 85(10)	Available
Vermont and Pennsylvania	Biol. Rep. 86(1)	Available
Massachusetts	Biol. Rep. 86(2)	Available
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		Available
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California	Biol. Rep. 89(10)	Available
Florida	Biol. Rep. 90(7)	Available
Nevada	Resour. Publ. 189	Available
North Carolina		In preparation
Virginia		In preparation

[a] Available from the National Ecology Research Center, U.S. Fish and Wildlife Service, 4512 McMurray Avenue, Fort Collins, Colorado 80525-3400.

NOTE: The mention of trade names does not constitute endorsement or recommendation for use by the Federal Government.

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